

CLAIMS

What is claimed is:

1. A data processing system comprising:
a cache to store a copy of metadata specifying a coherency relationship between a region of data and a flash copy image of said region of data, wherein said metadata is subject to one or more lock protocols controlled by an owner storage controller node; and
a client storage controller node, coupled with said cache, comprising an input/output performing component to receive a request to perform an input/output operation on at least one of said region of data and said flash copy image of said region of data and to perform said input/output operation utilizing said copy of said metadata.
2. The data processing system of claim 1, further comprising:
a messaging component, coupled between said client storage controller node and said owner storage controller node, to pass at least one of: a message to request a lock, a message to grant a lock, a message to request release of a lock, and a message to signal that a lock has been released.
3. The data processing system of claim 1, wherein said copy of said metadata comprises,
a previous positive confirmation that said region of data and a flash copy comprising said flash copy image of said region of data are consistent.
4. The data processing system of claim 3, wherein said input/output performing component is operable to discard said previous positive confirmation.

5. The data processing system of claim 3, wherein said previous positive confirmation further comprises
- a positive confirmation that a further region of data, contiguous with said region of data, is consistent with said flash copy.
6. The data processing system of claim 1, further comprising:
- a cache storage area to store said cache, wherein
- said input/output performing component is operable to selectively discard said copy of said metadata, and
- said cache storage area is reduced as a result of said copy of said metadata being discarded.
7. A method comprising:
- storing a copy of metadata specifying a coherency relationship between a region of data and a flash copy image of said region of data within a cache,
- wherein said metadata is subject to one or more lock protocols controlled by an owner storage controller node;
- receiving a request to perform an input/output operation on at least one of said region of data and said flash copy image of said region of data at a client storage controller node; and
- performing said input/output operation utilizing an input/output performing component of said client storage controller node and said copy of said metadata.
8. The method of claim 7, further comprising:
- transferring at least one of: a message to request a lock, a message to grant a lock, a message to request release of a lock, and a message to signal that a lock has been released between said client storage controller node and said owner storage controller node utilizing a messaging component.

9. The method of claim 7, wherein said copy of said metadata comprises,
a previous positive confirmation that said region of data and a flash copy
comprising said flash copy image of said region of data are consistent.
10. The method of claim 9, further comprising:
discarding said previous positive confirmation utilizing said input/output
performing component.
11. The method of claim 9, wherein said previous positive confirmation further
comprises
a positive confirmation that a further region of data, contiguous with said region
of data, is consistent with said flash copy.
12. The method of claim 7, further comprising:
selectively discarding said copy of said metadata to maintain a reduced cache
storage area including said cache.
13. A machine-readable medium having a plurality of instructions executable by a
machine embodied therein, wherein said plurality of instructions, when executed, cause
said machine to perform a method comprising:
storing a copy of metadata specifying a coherency relationship between a region
of data and a flash copy image of said region of data within a cache,
wherein said metadata is subject to one or more lock protocols controlled
by an owner storage controller node; and
receiving a request to perform an input/output operation on at least one of said
region of data and said flash copy image of said region of data at a client
storage controller node; and
performing said input/output operation utilizing an input/output performing
component of said client storage controller node and said copy of said
metadata.

14. The machine-readable medium of claim 13, said method further comprising:
transferring at least one of: a message to request a lock, a message to grant a lock,
a message to request release of a lock, and a message to signal that a lock
has been released between said client storage controller node and said
owner storage controller node utilizing a messaging component.
15. The machine-readable medium of claim 13, wherein said copy of said metadata
comprises,
a previous positive confirmation that said region of data and a flash copy
comprising said flash copy image of said region of data are consistent.
16. The machine-readable medium of claim 15, said method further comprising:
discarding said previous positive confirmation utilizing said input/output
performing component.
17. The machine-readable medium of claim 15, wherein said previous positive
confirmation further comprises
a positive confirmation that a further region of data, contiguous with said region
of data, is consistent with said flash copy.
18. The machine-readable medium of claim 13, said method further comprising:
selectively discarding said copy of said metadata to maintain a reduced cache
storage area including said cache.